Circle whoſe Diameter is $\frac{R}{I} \times \frac{S\ cub.}{D\ quad.}$ very nearly, as I gather by computing the Errors of the Rays by the method of infinite Series, and rejecting the Terms whoſe quantities are inconſiderable. As for inſtance, if the Sine of Incidence I, be to the Sine of Refraction R, as 20 to 31, and if D the Diameter of the Sphere to which the Convex ſide of the Glaſs is ground, be 100 Feet or 1200 Inches, and S the Semidiameter of the aperture be two Inches, the Diameter of the little Circle (that is $\frac{R \times S\ cub.}{I \times D\ quad.}$) will be $\frac{31 \times 8}{20 \times 1200 \times 1200}$ (or $\frac{31}{3600000}$) parts of an Inch. But the Diameter of the little Circle through which theſe Rays are ſcattered by unequal refrangibility, will be about the 55th part of the aperture of the Object-Glaſs which here is four Inches. And therefore the Error ariſing from the ſpherical Figure of the Glaſs, is to the Error ariſing from the different Refrangibility of the Rays, as $\frac{31}{3600000}$ to $\frac{4}{55}$ that is as 1 to 8151: and therefore being in Compariſon ſo very little, deſerves not to be conſidered.

But you will ſay, if the Errors cauſed by the different refrangibility be ſo very great, how comes it to paſs that Objects appear through Teleſcopes ſo diſtinct as they do? I anſwer, 'tis becauſe the erring Rays are not ſcattered uniformly over all that circular ſpace, but collected infinitely more denſely in the Center than in any other part of the Circle, and in the way from the Center to the Circumference grow continually rarer and rarer, ſo as at the Circumference to become infinitely rare; and by reaſon of their rarity are not ſtrong enough to be viſible, unleſs in the Center and very near it. Let ADE repreſent one of thoſe Circles deſcribed with the Center C and Semidiameter AC, and let BFG be a ſmaller Circle concentric to the former, cutting with

Fig. 27.